



(11)

EP 4 527 474 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
28.05.2025 Bulletin 2025/22

(43) Date of publication A2:
26.03.2025 Bulletin 2025/13

(21) Application number: **25156852.3**

(22) Date of filing: **08.06.2021**

(51) International Patent Classification (IPC):
A63F 1/06 ^(2006.01) **A63F 3/00** ^(2006.01)
G06K 19/04 ^(2006.01) **G06Q 50/34** ^(2012.01)
A63F 9/00 ^(2006.01)

(52) Cooperative Patent Classification (CPC):
G07F 17/322; G06Q 50/34; G07F 17/3234;
G07F 17/3241; G07F 17/3248

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR

(30) Priority: **12.06.2020 JP 2020102729**

(62) Document number(s) of the earlier application(s) in
accordance with Art. 76 EPC:
21821547.3 / 4 166 206

(71) Applicant: **ANGEL GROUP CO., LTD.**
Higashiomi-shi
Shiga 527-0232 (JP)

(72) Inventor: **SHIGETA, Yasushi**
Higashiomi-shi, Shiga 527-0232 (JP)

(74) Representative: **Bardehle Pagenberg**
Partnerschaft mbB
Patentanwälte Rechtsanwälte
Prinzregentenplatz 7
81675 München (DE)

(54) **CAGE SYSTEM, AND CHIP MANAGEMENT SYSTEM**

(57) A cage (10) is divided into a plurality of locations, including a cashier room (14). The gaming chip (70) has an RFID tag (71) storing a chip ID. The cage system (501) that manages the movement of the gaming chips within the cage (10) of the casino hall (1) comprises: a chip reader (123) that reads a chip ID from an RFID tag (71) of a gaming chip (70) moving between multiple locations

within the cage (10); a chip reader (133, 143) that reads the chip ID from the RFID tag (71) of the gaming chips (70) that exit the cage (10) to the casino hall (1); and a chip management database (101) that records the chip IDs read by the chip reader (123, 133, 143) as the movement history of the gaming chips (70).

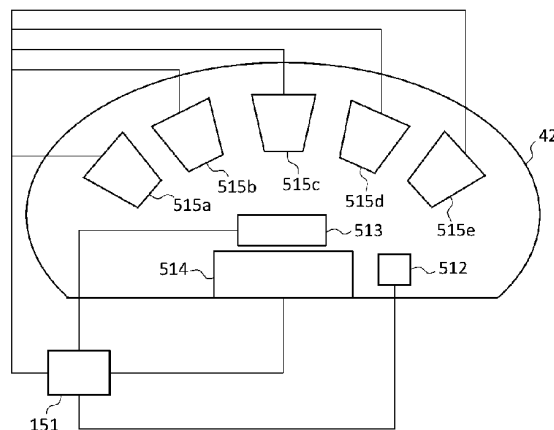


FIG.4



EUROPEAN SEARCH REPORT

Application Number

EP 25 15 6852

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2013/316797 A1 (GELINOTTE EMMANUEL [FR] ET AL) 28 November 2013 (2013-11-28) * abstract * * paragraph [0006] - paragraph [0007] * * paragraph [0011] - paragraph [0064] * * figure 1 *	1-7	INV. A63F1/06 A63F3/00 G06K19/04 G06Q50/34 A63F9/00
X	US 2020/122018 A1 (SHIGETA YASUSHI [JP]) 23 April 2020 (2020-04-23) * abstract * * paragraph [0052] - paragraph [0064] * * figure 1 *	1-7	
A	US 2020/118390 A1 (SHIGETA YASUSHI [JP]) 16 April 2020 (2020-04-16) * the whole document *	1-7	
A	US 2007/060313 A1 (MATHIS GWEN D [US] ET AL) 15 March 2007 (2007-03-15) * abstract * * paragraph [0011] - paragraph [0014] * * paragraph [0039] - paragraph [0051] *	1-7	TECHNICAL FIELDS SEARCHED (IPC)
A	US 2018/075690 A1 (MOORE CAROLYN [US] ET AL) 15 March 2018 (2018-03-15) * abstract * * figures 1,2,8 * * paragraph [0101] - paragraph [0105] *	1-7	G07F
A	US 5 735 742 A (FRENCH JOHN [US]) 7 April 1998 (1998-04-07) * abstract * * column 3, line 11 - line 39 * * column 4, line 40 - column 49 * * column 6, line 66 - column 7, line 17 * * column 8, line 42 - column 9, line 59 * * column 10, line 22 - line 35 * * figures 7-9 *	1-7	

The present search report has been drawn up for all claims

1

Place of search	Date of completion of the search	Examiner
The Hague	10 April 2025	Diepstraten, Marc
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document		

EPO FORM 1503 03.82 (P04C01)



EUROPEAN SEARCH REPORT

Application Number
EP 25 15 6852

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2010/093428 A1 (MATTICE HAROLD E [US] ET AL) 15 April 2010 (2010-04-15) * abstract * * paragraph [0837] - paragraph [0857] * -----	1-7	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 10 April 2025	Examiner Diepstraten, Marc
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 25 15 6852

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-04-2025

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2013316797 A1	28-11-2013	AU 2013266362 A1	27-11-2014
		CA 2873319 A1	28-11-2013
		CN 104620288 A	13-05-2015
		EP 2852939 A1	01-04-2015
		JP 2015525391 A	03-09-2015
		PH 12014502549 A1	21-01-2015
		SG 11201407362Y A	30-12-2014
		US 2013316797 A1	28-11-2013
US 2020122018 A1	23-04-2020	WO 2013177286 A1	28-11-2013
		-----	-----
		AU 2017279819 A1	19-07-2018
		AU 2017386775 A1	18-07-2019
		AU 2017389188 A1	18-07-2019
		AU 2019219763 A1	05-09-2019
		AU 2021202805 A1	03-06-2021
		AU 2021202868 A1	03-06-2021
		AU 2023201460 A1	13-04-2023
		AU 2023204403 A1	03-08-2023
		AU 2023206173 A1	10-08-2023
		AU 2025200183 A1	30-01-2025
		CA 2989878 A1	30-06-2018
		CA 3048973 A1	05-07-2018
		CA 3048975 A1	05-07-2018
		CN 108269365 A	10-07-2018
		CN 110769903 A	07-02-2020
		CN 110809490 A	18-02-2020
		CN 114694324 A	01-07-2022
		CN 117197958 A	08-12-2023
		CN 117275149 A	22-12-2023
		CN 117292489 A	26-12-2023
		CN 118334800 A	12-07-2024
		EP 3343523 A1	04-07-2018
		EP 3563913 A1	06-11-2019
		EP 3563914 A1	06-11-2019
		EP 3958226 A1	23-02-2022
		HK 1250417 A1	14-12-2018
		JP 6982579 B2	17-12-2021
		JP 7152317 B2	12-10-2022
		JP 7253028 B2	05-04-2023
		JP 7583090 B2	13-11-2024
		JP 2022024116 A	08-02-2022
		JP 2023002569 A	10-01-2023
		JP 2023085378 A	20-06-2023
		JP 2024010012 A	23-01-2024
		JP 2025020270 A	12-02-2025
		JP WO2018123149 A1	31-10-2019

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 25 15 6852

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-04-2025

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		JP WO2018123929 A1	12-12-2019
		KR 20180079186 A	10-07-2018
		KR 20190101426 A	30-08-2019
		KR 20190102042 A	02-09-2019
		KR 20190104970 A	11-09-2019
		KR 20210118800 A	01-10-2021
		KR 20220012984 A	04-02-2022
		KR 20220070414 A	31-05-2022
		KR 20220158285 A	30-11-2022
		KR 20230098531 A	04-07-2023
		KR 20230147762 A	23-10-2023
		KR 20240077483 A	31-05-2024
		MY 182255 A	18-01-2021
		MY 195161 A	11-01-2023
		MY 202267 A	21-04-2024
		NZ 738780 A	26-07-2019
		PH 12018000001 A1	28-01-2019
		PH 12019501550 A1	09-03-2020
		PH 12019501551 A1	01-06-2020
		PH 12023050120 A1	22-04-2024
		SG 10201710799T A	30-07-2018
		SG 10201913364X A	30-03-2020
		SG 10201913369Y A	27-02-2020
		SG 10201913374U A	30-03-2020
		SG 10201913770W A	30-03-2020
		SG 10201913773R A	30-03-2020
		SG 10201913776T A	30-03-2020
		SG 10201913779S A	30-03-2020
		US 2018185741 A1	05-07-2018
		US 2019318576 A1	17-10-2019
		US 2019344157 A1	14-11-2019
		US 2020122018 A1	23-04-2020
		US 2021283493 A1	16-09-2021
		US 2022212092 A1	07-07-2022
		US 2023338820 A1	26-10-2023
		US 2024033607 A1	01-02-2024
		WO 2018123149 A1	05-07-2018
		WO 2018123929 A1	05-07-2018

US 2020118390 A1	16-04-2020	AU 2016210614 A1	23-02-2017
		AU 2016302657 A1	22-02-2018
		AU 2017208255 A1	10-08-2017
		AU 2018204685 A1	17-01-2019
		AU 2018282261 A1	17-01-2019
		AU 2018282262 A1	17-01-2019
		AU 2018282263 A1	17-01-2019

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 25 15 6852

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10 - 04 - 2025

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		AU 2019100680 A4	25-07-2019
		AU 2019202813 A1	16-05-2019
		AU 2019204373 A1	11-07-2019
		AU 2019204560 A1	18-07-2019
		AU 2019226277 A1	26-09-2019
		AU 2020204077 A1	09-07-2020
		AU 2020233633 A1	08-10-2020
		AU 2020233666 A1	08-10-2020
		AU 2020233667 A1	08-10-2020
		AU 2021201556 A1	01-04-2021
		AU 2021202002 A1	29-04-2021
		AU 2021202290 A1	13-05-2021
		AU 2021202291 A1	13-05-2021
		AU 2021202355 A1	13-05-2021
		AU 2021209176 A1	19-08-2021
		AU 2021209177 A1	19-08-2021
		AU 2021215222 A1	02-09-2021
		AU 2021218048 A1	09-09-2021
		AU 2021221913 A1	23-09-2021
		AU 2021225257 A1	30-09-2021
		AU 2021236449 A1	14-10-2021
		AU 2021286383 A1	20-01-2022
		AU 2021286384 A1	20-01-2022
		AU 2022200022 A1	03-02-2022
		AU 2022202327 A1	28-04-2022
		AU 2022203089 A1	26-05-2022
		AU 2022204754 A1	28-07-2022
		AU 2022215214 A1	01-09-2022
		AU 2022224728 A1	22-09-2022
		AU 2022224730 A1	22-09-2022
		AU 2022235615 A1	13-10-2022
		AU 2022235616 A1	13-10-2022
		AU 2022235617 A1	13-10-2022
		AU 2022241498 A1	20-10-2022
		AU 2022271451 A1	22-12-2022
		AU 2022287566 A1	02-02-2023
		AU 2022287587 A1	02-02-2023
		AU 2023201041 A1	23-03-2023
		AU 2023202190 A1	04-05-2023
		AU 2023202240 A1	04-05-2023
		AU 2023202285 A1	11-05-2023
		AU 2023202469 A1	11-05-2023
		AU 2023202566 A1	18-05-2023
		AU 2023202805 A1	25-05-2023
		AU 2023203413 A1	29-06-2023
		AU 2023206116 A1	10-08-2023

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 25 15 6852

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10 - 04 - 2025

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		AU 2023208110 A1	17-08-2023
		AU 2023216877 A1	07-09-2023
		AU 2023222835 A1	14-09-2023
		AU 2023241358 A1	26-10-2023
		AU 2023248182 A1	02-11-2023
		AU 2023282243 A1	18-01-2024
		AU 2023285723 A1	18-01-2024
		AU 2023285725 A1	18-01-2024
		AU 2023285727 A1	18-01-2024
		AU 2024201387 A1	21-03-2024
		AU 2024201388 A1	21-03-2024
		AU 2024202228 A1	02-05-2024
		AU 2024203632 A1	20-06-2024
		AU 2024203633 A1	20-06-2024
		AU 2024204356 A1	11-07-2024
		AU 2024204357 A1	11-07-2024
		AU 2024204358 A1	11-07-2024
		AU 2024204552 A1	18-07-2024
		AU 2024205009 A1	08-08-2024
		AU 2024205041 A1	08-08-2024
		AU 2024205208 A1	15-08-2024
		AU 2024205524 A1	22-08-2024
		AU 2024205526 A1	22-08-2024
		AU 2024205529 A1	22-08-2024
		AU 2024205561 A1	22-08-2024
		AU 2024205709 A1	29-08-2024
		AU 2024208802 A1	05-09-2024
		AU 2024266875 A1	12-12-2024
		AU 2024278137 A1	02-01-2025
		AU 2024278204 A1	02-01-2025
		AU 2024278205 A1	02-01-2025
		AU 2025200881 A1	27-02-2025
		AU 2025201070 A1	06-03-2025
		AU 2025201661 A1	27-03-2025
		AU 2025201668 A1	27-03-2025
		CA 2994520 A1	09-02-2017
		CA 3146764 A1	09-02-2017
		CN 106408785 A	15-02-2017
		CN 107358758 A	17-11-2017
		CN 107949428 A	20-04-2018
		CN 109147225 A	04-01-2019
		CN 109831908 A	31-05-2019
		CN 109887191 A	14-06-2019
		CN 110060432 A	26-07-2019
		CN 111369746 A	03-07-2020
		CN 111583544 A	25-08-2020

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 25 15 6852

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10 - 04 - 2025

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		CN 111583545 A	25-08-2020
		CN 111583546 A	25-08-2020
		CN 112619118 A	09-04-2021
		CN 112891910 A	04-06-2021
		CN 113952703 A	21-01-2022
		CN 113975782 A	28-01-2022
		CN 114392543 A	26-04-2022
		CN 114681893 A	01-07-2022
		CN 114917571 A	19-08-2022
		CN 114999071 A	02-09-2022
		CN 115155051 A	11-10-2022
		CN 115463403 A	13-12-2022
		CN 115463404 A	13-12-2022
		CN 115581908 A	10-01-2023
		CN 115581909 A	10-01-2023
		CN 115607941 A	17-01-2023
		CN 115634442 A	24-01-2023
		CN 115837157 A	24-03-2023
		CN 115862231 A	28-03-2023
		CN 115957498 A	14-04-2023
		CN 115970257 A	18-04-2023
		CN 116052342 A	02-05-2023
		CN 116328283 A	27-06-2023
		CN 116524659 A	01-08-2023
		CN 116543504 A	04-08-2023
		CN 116631125 A	22-08-2023
		CN 116688477 A	05-09-2023
		CN 116943135 A	27-10-2023
		CN 117018630 A	10-11-2023
		CN 118570933 A	30-08-2024
		CN 118662873 A	20-09-2024
		CN 118692191 A	24-09-2024
		CN 118736731 A	01-10-2024
		CN 118736732 A	01-10-2024
		CN 118762450 A	11-10-2024
		CN 118781716 A	15-10-2024
		CN 118800008 A	18-10-2024
		CN 118968677 A	15-11-2024
		CN 118968678 A	15-11-2024
		CN 119169743 A	20-12-2024
		CN 119360511 A	24-01-2025
		CN 119380466 A	28-01-2025
		CN 119445726 A	14-02-2025
		EP 3332846 A1	13-06-2018
		EP 3751504 A2	16-12-2020
		EP 4123564 A1	25-01-2023

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 25 15 6852

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10 - 04 - 2025

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		EP 4123565 A1	25-01-2023
		EP 4123566 A1	25-01-2023
		EP 4167176 A1	19-04-2023
		EP 4169592 A1	26-04-2023
		EP 4181051 A1	17-05-2023
		EP 4220536 A1	02-08-2023
		EP 4235558 A2	30-08-2023
		EP 4235559 A2	30-08-2023
		EP 4428798 A2	11-09-2024
		EP 4428799 A2	11-09-2024
		EP 4428800 A2	11-09-2024
		EP 4428801 A2	11-09-2024
		EP 4428802 A2	11-09-2024
		EP 4432207 A2	18-09-2024
		EP 4435708 A2	25-09-2024
		EP 4435709 A2	25-09-2024
		EP 4443375 A2	09-10-2024
		EP 4451199 A2	23-10-2024
		EP 4465232 A2	20-11-2024
		EP 4465233 A2	20-11-2024
		EP 4517641 A2	05-03-2025
		EP 4535276 A2	09-04-2025
		EP 4542482 A2	23-04-2025
		ES 2842307 T3	13-07-2021
		ES 2970745 T3	30-05-2024
		ES 2973491 T3	20-06-2024
		ES 2976084 T3	23-07-2024
		ES 2983821 T3	25-10-2024
		ES 2984288 T3	29-10-2024
		ES 2985532 T3	06-11-2024
		ES 2985548 T3	06-11-2024
		ES 2994166 T3	20-01-2025
		ES 2994193 T3	20-01-2025
		HK 1250353 A1	14-12-2018
		JP 6726229 B2	22-07-2020
		JP 6855429 B2	07-04-2021
		JP 6855430 B2	07-04-2021
		JP 6957685 B2	02-11-2021
		JP 7037939 B2	17-03-2022
		JP 7046870 B2	04-04-2022
		JP 7065228 B2	11-05-2022
		JP 7065903 B2	12-05-2022
		JP 7085040 B2	15-06-2022
		JP 7149401 B2	06-10-2022
		JP 7178964 B2	28-11-2022
		JP 7284785 B2	31-05-2023

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 25 15 6852

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-04-2025

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		JP 7295081 B2	20-06-2023
		JP 7320566 B2	03-08-2023
		JP 7381517 B2	15-11-2023
		JP 7439224 B2	27-02-2024
		JP 7481389 B2	10-05-2024
		JP 7566987 B2	15-10-2024
		JP 7568706 B2	16-10-2024
		JP 2017064386 A	06-04-2017
		JP 2018020103 A	08-02-2018
		JP 2018108506 A	12-07-2018
		JP 2018108507 A	12-07-2018
		JP 2019005565 A	17-01-2019
		JP 2019018089 A	07-02-2019
		JP 2019018090 A	07-02-2019
		JP 2019171136 A	10-10-2019
		JP 2019171137 A	10-10-2019
		JP 2020028741 A	27-02-2020
		JP 2020110677 A	27-07-2020
		JP 2020121166 A	13-08-2020
		JP 2020157115 A	01-10-2020
		JP 2020157116 A	01-10-2020
		JP 2021010787 A	04-02-2021
		JP 2021102073 A	15-07-2021
		JP 2021102074 A	15-07-2021
		JP 2021137609 A	16-09-2021
		JP 2021168938 A	28-10-2021
		JP 2022000158 A	04-01-2022
		JP 2022010052 A	14-01-2022
		JP 2022022976 A	07-02-2022
		JP 2022028892 A	16-02-2022
		JP 2022028971 A	16-02-2022
		JP 2022037200 A	08-03-2022
		JP 2022058521 A	12-04-2022
		JP 2022088655 A	14-06-2022
		JP 2022095996 A	28-06-2022
		JP 2022126832 A	30-08-2022
		JP 2022141672 A	29-09-2022
		JP 2022160623 A	19-10-2022
		JP 2022160624 A	19-10-2022
		JP 2022169573 A	09-11-2022
		JP 2022177263 A	30-11-2022
		JP 2022177264 A	30-11-2022
		JP 2022191299 A	27-12-2022
		JP 2022191300 A	27-12-2022
		JP 2023027083 A	01-03-2023
		JP 2023030162 A	07-03-2023

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 25 15 6852

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10 - 04 - 2025

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		JP 2023036683 A	14-03-2023
		JP 2023103442 A	26-07-2023
		JP 2023106597 A	01-08-2023
		JP 2023130437 A	20-09-2023
		JP 2023139181 A	03-10-2023
		JP 2023139271 A	03-10-2023
		JP 2023145786 A	11-10-2023
		JP 2023175967 A	12-12-2023
		JP 2024023642 A	21-02-2024
		JP 2024075730 A	04-06-2024
		JP 2024103611 A	01-08-2024
		JP 2024109932 A	14-08-2024
		JP 2024112979 A	21-08-2024
		JP 2024112980 A	21-08-2024
		JP 2024113179 A	21-08-2024
		JP 2024119874 A	03-09-2024
		JP 2024124551 A	12-09-2024
		JP 2024133396 A	01-10-2024
		JP 2024133696 A	02-10-2024
		JP 2024138502 A	08-10-2024
		JP 2024147618 A	16-10-2024
		JP 2024156780 A	06-11-2024
		JP 2025024125 A	19-02-2025
		JP 2025024139 A	19-02-2025
		JP 2025024231 A	19-02-2025
		JP WO2017022766 A1	24-05-2018
		KR 20170016303 A	13-02-2017
		KR 20180037196 A	11-04-2018
		KR 20180122998 A	14-11-2018
		KR 20180123460 A	16-11-2018
		KR 20190001945 A	07-01-2019
		KR 20190039907 A	16-04-2019
		KR 20200043350 A	27-04-2020
		KR 20200106484 A	14-09-2020
		KR 20200115426 A	07-10-2020
		KR 20210043748 A	21-04-2021
		KR 20210043749 A	21-04-2021
		KR 20210068364 A	09-06-2021
		KR 20210068365 A	09-06-2021
		KR 20210070261 A	14-06-2021
		KR 20210103451 A	23-08-2021
		KR 20220002232 A	06-01-2022
		KR 20220002836 A	07-01-2022
		KR 20220002837 A	07-01-2022
		KR 20220037425 A	24-03-2022
		KR 20220050861 A	25-04-2022

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 25 15 6852

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-04-2025

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		KR 20220103667 A	22-07-2022
		KR 20220119576 A	30-08-2022
		KR 20220123192 A	06-09-2022
		KR 20220124654 A	14-09-2022
		KR 20220130640 A	27-09-2022
		KR 20220163309 A	09-12-2022
		KR 20230007977 A	13-01-2023
		KR 20230010263 A	18-01-2023
		KR 20230023686 A	17-02-2023
		KR 20230066130 A	12-05-2023
		KR 20230074854 A	31-05-2023
		KR 20230084438 A	13-06-2023
		KR 20230088651 A	20-06-2023
		KR 20230091846 A	23-06-2023
		KR 20230143976 A	13-10-2023
		KR 20240085228 A	14-06-2024
		KR 20240095120 A	25-06-2024
		KR 20240105352 A	05-07-2024
		KR 20240105353 A	05-07-2024
		KR 20240110531 A	15-07-2024
		KR 20240111733 A	17-07-2024
		KR 20240112367 A	18-07-2024
		KR 20240117067 A	31-07-2024
		KR 20240120711 A	07-08-2024
		KR 20240121193 A	08-08-2024
		KR 20240121200 A	08-08-2024
		KR 20240121201 A	08-08-2024
		KR 20240122724 A	13-08-2024
		KR 20240125881 A	20-08-2024
		KR 20240167619 A	27-11-2024
		KR 20240169570 A	03-12-2024
		KR 20250004602 A	08-01-2025
		KR 20250024787 A	19-02-2025
		KR 20250036780 A	14-03-2025
		MY 179431 A	06-11-2020
		MY 189510 A	16-02-2022
		MY 199914 A	29-11-2023
		NZ 778625 A	27-10-2023
		NZ 778631 A	27-10-2023
		PH 12016000270 A1	12-02-2018
		PH 12018000185 A1	11-02-2019
		PH 12018500270 A1	13-08-2018
		PH 12019000244 A1	17-02-2020
		PH 12019000245 A1	17-02-2020
		PH 12019000246 A1	17-02-2020
		PH 12019000415 A1	16-03-2020

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 25 15 6852

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-04-2025

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		PH 12020050112 A1	22-02-2021
		PH 12020050222 A1	18-01-2021
		PH 12020050224 A1	08-02-2021
		PH 12020050241 A1	13-09-2021
		PH 12020050242 A1	13-09-2021
		PH 12020050252 A1	18-01-2021
		PH 12020551279 A1	22-11-2021
		PH 12021050447 A1	28-03-2022
		PH 12021050479 A1	28-03-2022
		PH 12021050593 A1	14-02-2022
		PH 12022050160 A1	13-06-2022
		PH 12022050348 A1	03-04-2023
		PH 12022050349 A1	03-04-2023
		PH 12022050364 A1	03-04-2023
		PH 12022050365 A1	03-04-2023
		PH 12022050389 A1	18-03-2024
		PH 12022050390 A1	03-04-2023
		PH 12022050391 A1	03-04-2023
		PH 12022050392 A1	03-04-2023
		PH 12022050393 A1	03-04-2023
		PH 12022050394 A1	08-05-2023
		PH 12022050395 A1	08-05-2023
		PH 12022050448 A1	08-05-2023
		PH 12022050449 A1	08-05-2023
		PH 12022050450 A1	08-05-2023
		PH 12022050457 A1	08-05-2023
		PH 12022551087 A1	22-05-2023
		PH 12022553539 A1	13-11-2023
		PH 12023050395 A1	02-10-2023
		PH 12023050401 A1	04-12-2023
		PH 12023050678 A1	22-04-2024
		SG 10201606360V A	30-03-2017
		SG 10201706673P A	28-09-2017
		SG 10201803875T A	28-06-2018
		SG 10201805585X A	30-01-2019
		SG 10201807905P A	30-10-2018
		SG 10201810459V A	28-12-2018
		SG 10201810508Y A	28-12-2018
		SG 10201906454X A	27-08-2019
		SG 10201906455W A	27-08-2019
		SG 10201906456Q A	27-08-2019
		SG 10201908300W A	30-10-2019
		SG 10201913917S A	30-03-2020
		SG 10201913919Y A	30-03-2020
		SG 10201913921S A	30-03-2020
		SG 10201913924U A	30-03-2020

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 25 15 6852

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-04-2025

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		SG 10201914021S A	30-03-2020
		SG 10201914026X A	30-03-2020
		SG 10201914031X A	30-03-2020
		SG 10201914036P A	30-03-2020
		SG 10201914044V A	30-03-2020
		SG 10201914050X A	30-03-2020
		SG 10201914053U A	30-03-2020
		SG 10201914056R A	30-03-2020
		SG 10201914068V A	30-03-2020
		SG 10201914072U A	30-03-2020
		SG 10201914075X A	30-03-2020
		SG 10201914079V A	30-03-2020
		SG 10201914080S A	30-03-2020
		SG 10201914081V A	30-03-2020
		SG 10202104043R A	29-06-2021
		SG 10202108956W A	29-09-2021
		SG 10202109414S A	28-10-2021
		SG 10202110761S A	29-11-2021
		SG 11201800927T A	28-03-2018
		US 2017039807 A1	09-02-2017
		US 2018232987 A1	16-08-2018
		US 2018300984 A1	18-10-2018
		US 2018350192 A1	06-12-2018
		US 2018350193 A1	06-12-2018
		US 2018374302 A1	27-12-2018
		US 2019005767 A1	03-01-2019
		US 2019102988 A1	04-04-2019
		US 2019102989 A1	04-04-2019
		US 2019172311 A1	06-06-2019
		US 2019251784 A1	15-08-2019
		US 2019251785 A1	15-08-2019
		US 2019251786 A1	15-08-2019
		US 2019333326 A1	31-10-2019
		US 2019333327 A1	31-10-2019
		US 2019340873 A1	07-11-2019
		US 2019392680 A1	26-12-2019
		US 2020118390 A1	16-04-2020
		US 2020265672 A1	20-08-2020
		US 2020349808 A1	05-11-2020
		US 2020349809 A1	05-11-2020
		US 2020349810 A1	05-11-2020
		US 2020349811 A1	05-11-2020
		US 2020372752 A1	26-11-2020
		US 2020394870 A1	17-12-2020
		US 2021012612 A1	14-01-2021
		US 2021233353 A1	29-07-2021

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 25 15 6852

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10 - 04 - 2025

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		US 2021233354 A1	29-07-2021
		US 2021343113 A1	04-11-2021
		US 2021343114 A1	04-11-2021
		US 2021350665 A1	11-11-2021
		US 2022005315 A1	06-01-2022
		US 2022012984 A1	13-01-2022
		US 2022101686 A1	31-03-2022
		US 2022101687 A1	31-03-2022
		US 2022122417 A1	21-04-2022
		US 2022237983 A1	28-07-2022
		US 2022254226 A1	11-08-2022
		US 2022351576 A1	03-11-2022
		US 2022406133 A1	22-12-2022
		US 2022406134 A1	22-12-2022
		US 2022415123 A1	29-12-2022
		US 2023013571 A1	19-01-2023
		US 2023018148 A1	19-01-2023
		US 2023018470 A1	19-01-2023
		US 2023020277 A1	19-01-2023
		US 2023078409 A1	16-03-2023
		US 2023154279 A1	18-05-2023
		US 2023154280 A1	18-05-2023
		US 2023154281 A1	18-05-2023
		US 2023154282 A1	18-05-2023
		US 2023154283 A1	18-05-2023
		US 2023162565 A1	25-05-2023
		US 2023177919 A1	08-06-2023
		US 2023196877 A1	22-06-2023
		US 2023274611 A1	31-08-2023
		US 2023334941 A1	19-10-2023
		US 2023360475 A1	09-11-2023
		US 2023360476 A1	09-11-2023
		US 2023368611 A1	16-11-2023
		US 2023386295 A1	30-11-2023
		US 2024005729 A1	04-01-2024
		US 2024046749 A1	08-02-2024
		US 2024321051 A1	26-09-2024
		US 2024321052 A1	26-09-2024
		US 2024355174 A1	24-10-2024
		US 2024378954 A1	14-11-2024
		US 2024378955 A1	14-11-2024
		US 2024378956 A1	14-11-2024
		US 2024378958 A1	14-11-2024
		US 2024378959 A1	14-11-2024
		US 2024395106 A1	28-11-2024
		US 2024404358 A1	05-12-2024

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 25 15 6852

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

10-04-2025

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		US 2024404360 A1	05-12-2024
		US 2025095440 A1	20-03-2025
		US 2025111746 A1	03-04-2025
		WO 2017022766 A1	09-02-2017

US 2007060313 A1	15-03-2007	NONE	

US 2018075690 A1	15-03-2018	AU 2016265851 A1	02-11-2017
		AU 2021232726 A1	14-10-2021
		AU 2022287632 A1	02-02-2023
		AU 2024202911 A1	23-05-2024
		CN 107847797 A	27-03-2018
		PH 12017501686 A1	19-03-2018
		US 2018075690 A1	15-03-2018
		US 2020349797 A1	05-11-2020
		US 2022172552 A1	02-06-2022
		US 2023267802 A1	24-08-2023
		US 2024362970 A1	31-10-2024
		WO 2016187164 A1	24-11-2016

US 5735742 A	07-04-1998	NONE	

US 2010093428 A1	15-04-2010	EP 2414998 A1	08-02-2012
		US 2010093428 A1	15-04-2010
		WO 2010114576 A1	07-10-2010

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82